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(54) Title: TENNIS COURT

(57) Abstract: The tennis court in accordance with the invention is adapted at training of tennis ball impact accuracy after serving or a stroke to determined target (2) located at the playing area (3) of the tennis court by adaptation consist of a stable aid (1) equipped with a auxiliary area (1.3) lain in a vertical plane (4) touched a border of determined target (2) and oriented against direction of tennis ball movement and minimum its contour (1.3.1) is contrast with a background of a stable aid (1), or with the playing are (3) and/or with a net.

Tennis court

Technical Field

The invention solves problem of impact accuracy training of a tennis ball after tennis serving or a stroke with utilising of common tennis court adapted for this purpose by application of an aid lightening identification determined place of tennis ball impact.

Backround Art

Nowadays are known several manners and aids that serve for drill and improvement of tennis game or acquirement of certain habits utilisable at tennis play as well as various service aids.

There exists series of aids in the form of reflection walls suitable as for training of impact accuracy of the tennis ball so also at practice of rebounded ball capture. These aids is possible to rebuild at various places of the playing area and their construction allows to recline the wall and by it to choose angle of impact and bounce of the tennis ball. Construction solution of the reflection wall provides possibility not only simple bounce of the ball independent from wall inclination but in the scope of one inclination provides quantity of rebound variations. This effect is reached e.g. by a wall from netting. Technically more demanding reflection walls apart from tennis ball bounce provide by means of sensors reacted at ball bump checking of accuracy at serving and simultaneously strength of a stroke. Sensors are connected with a decoding and consecutively with a sound or a light indicator.

Also various aids applied at the playing area are used at checking of impact accuracy of a tennis ball after tennis serving or a stroke. Mostly they are plane formations located at a determined place or plane formations corresponding to boundary lines and settled at these lines, equipped with sensors for scanning of the tennis ball contact with a formation. Sensors are

connected with a plotting machine, e.g. a microprocessor or with a light or a sound signal device.

There are not known solutions of accuracy practice problem of tennis ball impact at the playing area of the tennis court. Effort of this invention is to solve this state.

Disclosure of Invention

According to the invention the tennis court is suitable for practice of impact accuracy of a tennis ball at a determined place of a playing area. Its substance consists in the fact that the tennis court is adapted at accuracy practice of the tennis ball impact to a determined target at the court playing area after tennis serving or a stroke. Adaptation is characteristic by this manner that is created by a stable aids equipped with the surface settled in a vertical contact plane to the target border and is orientated against direction of tennis ball movement. Minimum the area contour is contrast with a background of the aid, or with the playing area and/or with the net. Reason of this adaptation is providing enhancement of determined, already marked target or a virtual target located and lain in the plane of the court playing area surface limited by an edge of boundary lines and by this manner to increase intensity value of visual perception for target distance determination from player organ of sight and in connection to relieve practice of player motor movement and value by him spent kinetic energy at tennis ball impact achievement of determined target after tennis serving or tennis stroke. Filling of adaptation target is realised by border transposition of determined target in vertical direction. To the substance of the invention is possible to allocate also an adaptation or realisation of the determined target that is able to scan tennis ball impact at determined target and impact to signalise by a manner sensible by man organs of sight or hearing organs or to scan tennis ball impact and result to transform to a signal commanding a instruments at invocation a light or a sound effect or to a signal commanding a decoding device and consecutively to an instrument for data processing and accessing of results of processing.

Brief Description of Drawings

Essence of the tennis court, that is subject of protection, is illustrated by means of schematic drown pictures that express instructions at possible concrete realisation of the invention.

On picture No.1 is visible axonometric view at the tennis court with the simplest adaptation that allows practice of impact accuracy. On picture No.2 is drown axonometric view at the tennis court with adaptation that allows to signalise impact accuracy of a tennis ball at determined target by a sound signal based at mechanical principle. Sample of construction solution of adaptation is illustrated in section of a front view. Picture No.4 is drown in section of a front view and illustrates possibility of realisation of construction adaptation solution with utilising of a light signal. Picture No.5 illustrates in a front view with partial section in area of target contact scanning with a tennis ball possible solution of adaptation equipped with a scanning mean, a measuring instrument, a decoding instrument and an instrument for data processing. More concrete sample of system realisation in accordance with picture No.5 is illustrated on picture No.6 and on picture No.7 is illustrated principle of this realisation with utilising of a block scheme.

Best Mode for Carrving Out the Invention

The tennis court on accordance with invention as is illustrated on picture No.1 contains a stable aid 1, equipped with a light panel 1.1 from wood, plastic or other suitable material. Stability of the aid 1 and at the same time its portability at a determined place of the playing area 3 is solved by means of supports 1.2 located single-side in relation to thickness of a panel and at both vertical outer parts of the panel 1.1. In the case of invention application, as it illustrated on picture No.1, is determined target 2 a part of the basic line 3.1 of the half of the playing area 3 at which impacts a tennis ball after serving or a tennis stroke from opposite half of the playing area 3. The external edge of the basic line creates a border 2.1 of determined target 2. Through this border 2.1 runs through a virtual vertical plane 4 in which lies a help plane 1.3 of the

panel 1.1 oriented against movement direction of non-figured tennis ball, while direction of it movement must not be vertical at this help area 1.3. Supports 2 can be loaded against self-acting reclination of the aid 1. Solution creates assumptions at quantity variants of concrete invention realisation that is accessible by construction of the stable aid 1 itself, by shape and dimensional solution of particularly light panel 1.1, by contrast of the aid 1 with background as well as colour solution of the help plane 1.3, that e.g. by means of vertical, from themselves outlying and colour different strips can provide enhancement of position also for more determined targets 2 by one aid 1.

Effect of practising of tennis ball impact accuracy after serving or a stroke can increase solution of its evaluation. This function can fill determined target 2 created as a part or a system that is able immediately after tennis ball impact to evaluate its accuracy, while it can create firm or removable part of the stable aid 1, or can be independent application part. Picture No.3 illustrates a sample of such kind of the concrete construction of the invention that is possible to deem as one from simple, from view of production and economy unpretending constructions. Determined target 2 is a low container created from adequate elastic and sound spread material. Suitable is metal material. The container is filled by free-bedded metal elements 2.2, e.g. by small metal parts as are small nuts, nails, screws, etc. The container is fixed by means of a tap 5 to the support 1.2 of the stable aid 1. Surface of the container by largeness corresponds to largeness of determined aim 2. By tennis ball impact at construction surface of the determined target 2, this will resound and by this will be developed contact among infilling elements 2.2 mutually and among infilling elements 2.2 with internal container surface accompanying by sound effect.

Evaluation of tennis ball impact correctness after serving or a stroke is possible to provide also by means of a light signal. For this purpose will serve a construction of the determined target 2 illustrated at picture No.4. Two mutually bounded parts 2.3 and 2.4 create it. The first part 2.3 is a base fixed to the stable aid 1 and is equipped with elements they are one segment 2.5.1 of electric switcher 2.5. The second part 2.4 of the determined target 2 has surface which largeness responds to area of the determined target 2 and is swinging in

relation to the first part 2.3 swinging with utilising of springs 2.3. The second part 2.3 of determined target 2 is equipped with the second segment 2.5.2 of electric switch 2.5. The electric switch 2.5 is electrically connected in a circle connected at non-displayed source of electric current with a light source 6 that will light up after tennis ball impact on determined target 2 when the pair of segments 2.5.1 and 2.5.2 will connect electric switch 2.5 and electric circle is closed.

Effect of practice tennis ball impact accuracy after serving or a stroke at determined area is possible to provide also with technically more demanding application of the invention, e.g. such as is illustrated at picture No.6. In this case areas contacted with a tennis ball, does not matter is already area of the determined target 2 or also the auxiliary area 1.3 of the panel 1.1 of the aid 1 are equipped with scanners 1.3.2, 2.7. Each scanner 1.3.2, 2.7 creates pair of like mirror arranged elastic metal foils 1.3.2.1, 2.7.2 perforated with big holes 1.3.2.3, 2.7.2.1. Scanners 1.3.2; 2.7 are parts of electric circle in principle visible at picture No.7 with non-marked source of voltage. At the output side are scanners 1.3.2, 2.7 connected with a sequence decoder 7 and this is connected with a generator 8 of a sound signal and a loudspeaker 9 can be a part of a microcomputer 10. Operation of this system is characteristic thereby, that after contact of a tennis ball first with the determined target 2 and after its rebound from the auxiliary area 1.3 of the panel 1.1 will be activated a circle that decodes a contact as correct by a sound signal, e.g. by verbal signal determined for identification of this state. If after a tennis strike or after serving at first is realised a direct contact or after bounce from the playing area with exception area of determined target a contact with the auxiliary area 1.3 of the panel 1.1 is activated system that signalises that serving or a tennis stroke was incorrect. By this way are excluded mistakes at sequence identification of tennis ball impact. Advantage of this solution is that by using of a computer in the system is possible to reach further functions of solution. For example shifting of the panel bottom part (picture No.6) that essentially will not affect the basic function of the aids from view of the basic function, i.e. simplification of visual determination of a concrete target at the playing area allows reliably train and evaluate practice of tennis ball impact in boundary positions e.g. in

places of external edge of lines bounding the playing area. Evaluation of tennis ball impact is possible to realise not only by a signal of correct or incorrect tennis ball impact, but is real also evaluation of relation of tennis ball impact place and edge of determined target 2, e.g. outside edge of the line bounding the playing area with utilising a computer 10 and its software. For scanning of tennis ball impact is possible to use different kinds of scanners. Piezoelectric scanners are advantageous.

From listed results that the invention gives assumption at quantity of variants of concrete realisation. For this reason mentioned samples is needed to understand as illustration that mitigate understanding of invention essence.

Industrial Applicability

Essence of the invention gives assumptions for expressive more extensive application of the tennis court then is listed in samples of realisation. Except tennis the principle is utilisable also in other sports.

Claims

1. The tennis court characterized by that is adapted at training of tennis ball impact accuracy after serving or a stroke to determined target (2) located at the playing area (3) of the tennis court by adaptation consist of a stable aid (1) equipped with a auxiliary area (1.3) lain in a vertical plane (4) touched a border of determined target (2) and oriented against direction of tennis ball movement and minimum its contour (1.3.1) is contrast with a background of a stable aid (1), or with the playing area (3) and/or with a net.

2. The tennis court in accordance with requirement 1, characterized by that determined target (2) is a part of a stable aid (1) or is an independent work.

3. The tennis court in accordance with requirement 1 and 2, characterized by that that determined target (2) is adapted for editing audio sensible signal after contact of a tennis ball with it, different from any other signal of audio sensible signal.

4. The tennis court in accordance with requirement 1, characterized by that that determined target (2) is adapted at contact scanning with a tennis ball, transmission of contiguous signal, his evaluation and transformation at audio and/or visually sensible form.

5. The tennis court in accordance with requirement 1, characterized by that the auxiliary area (1.3) of the aid (1) is adapted for contact scanning with a tennis ball, transmission of contiguous signal, his evaluation and transformation at audio and/or visually sensible form.

6 The tennis court in accordance with requirement 1, characterized by that that location of the aid (1) is at the playing area (3) of the tennis court adjustable.

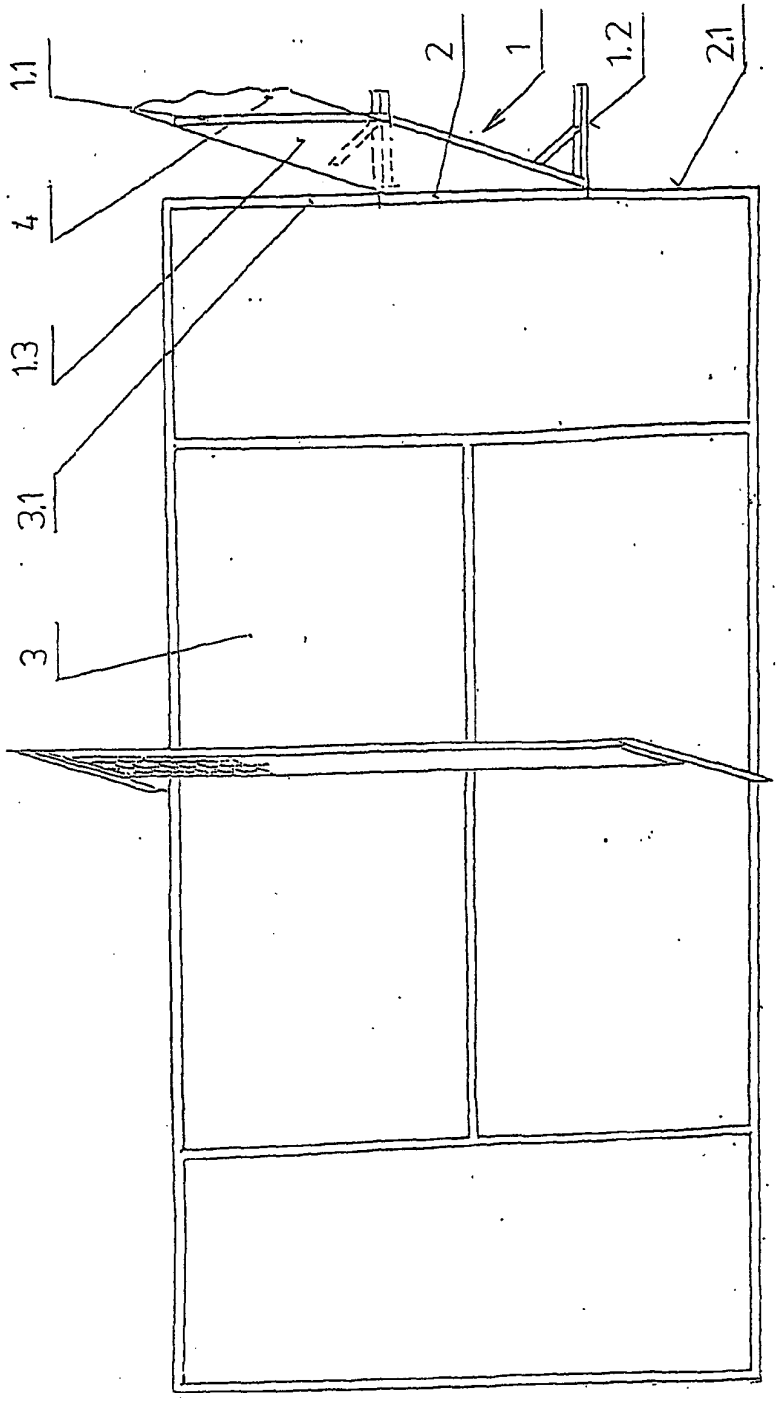

FIG. 1

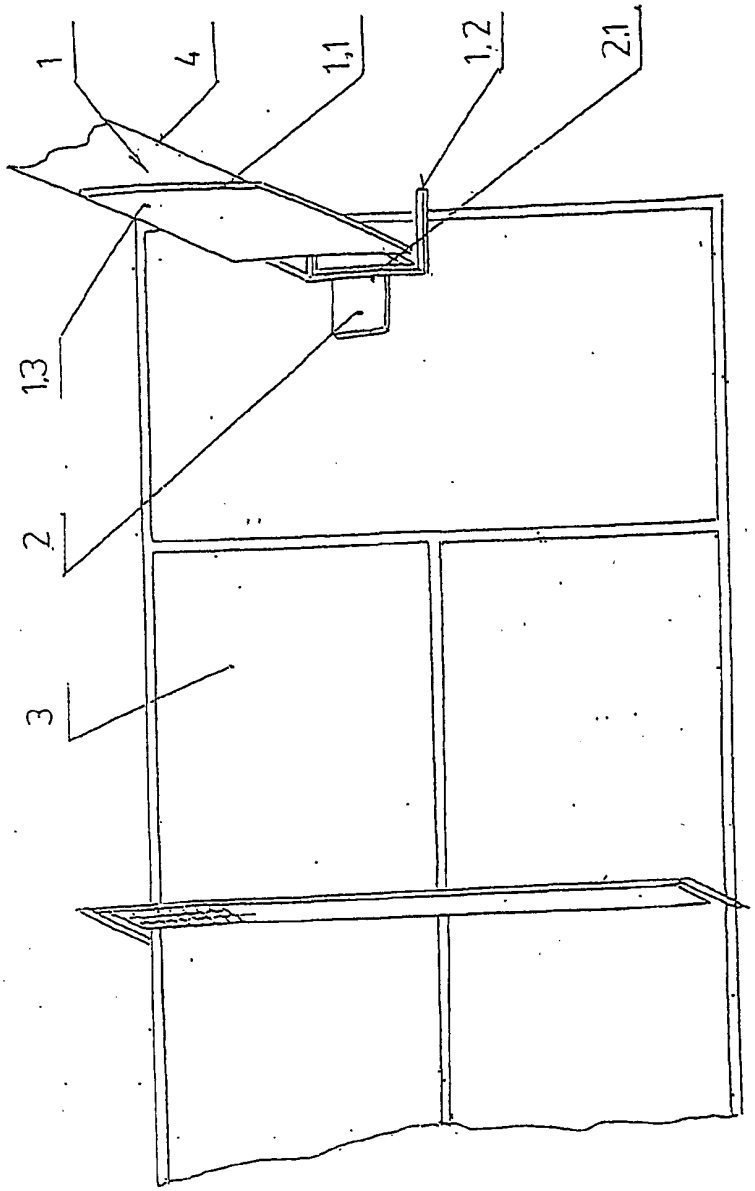

FIG. 2

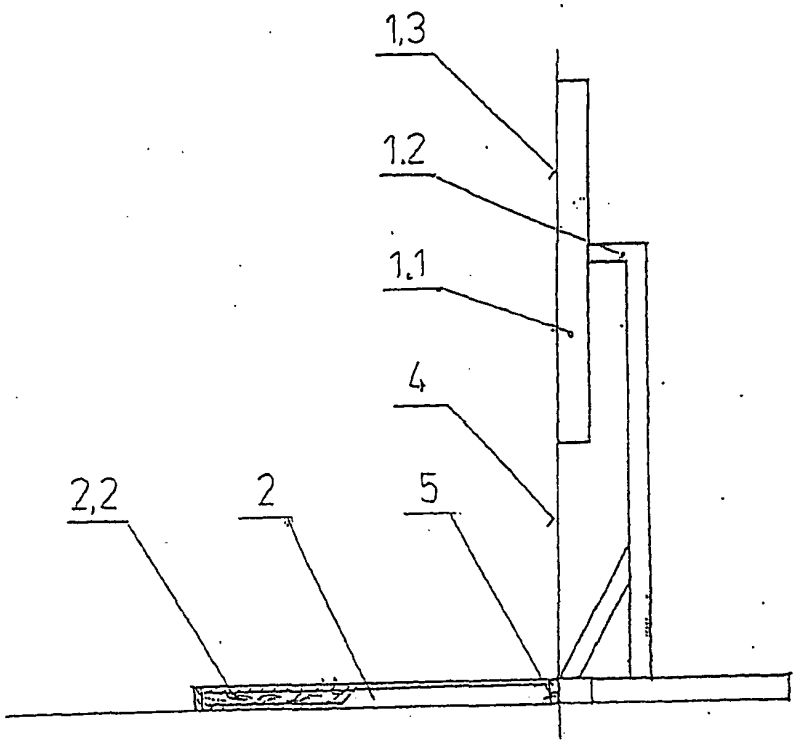

FIG. 3

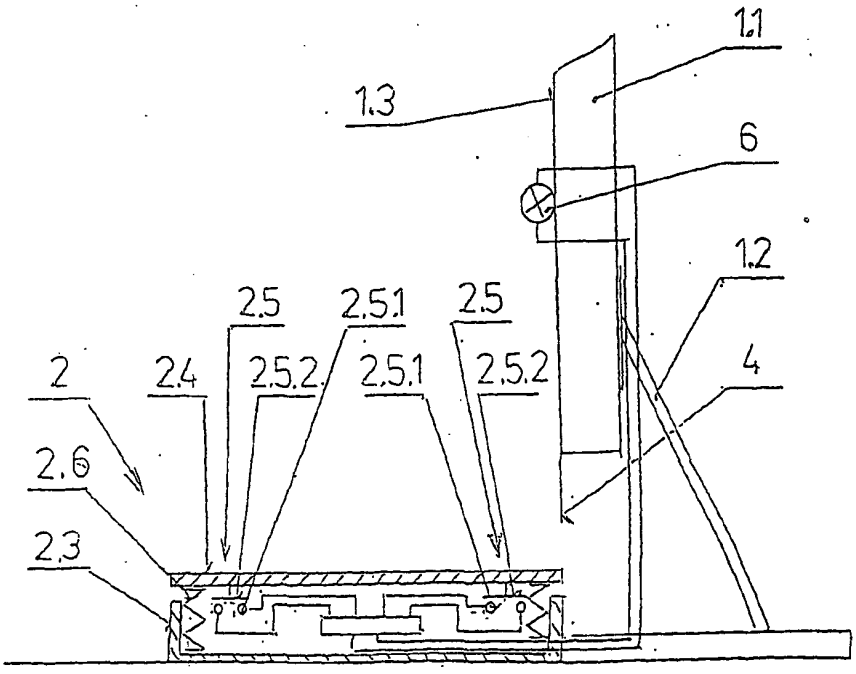

FIG. 4

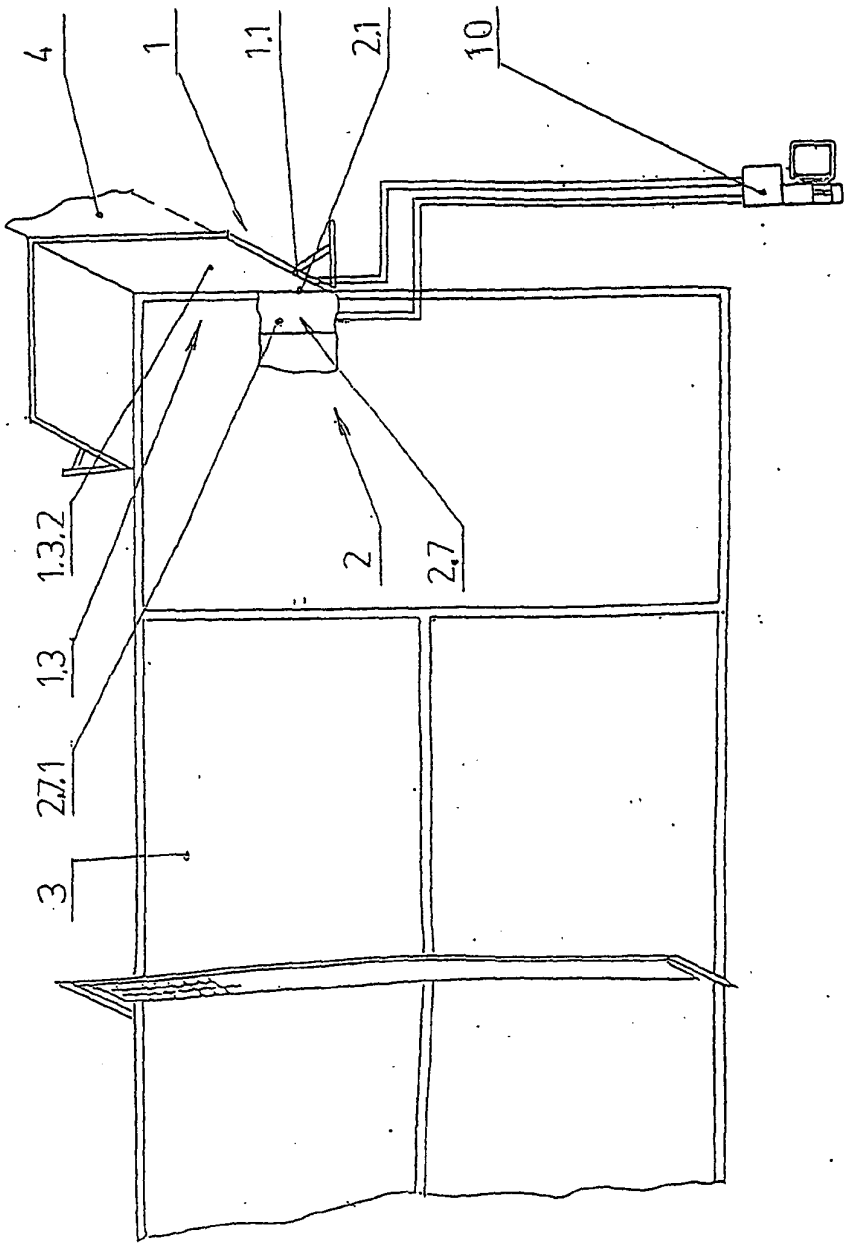

FIG. 5

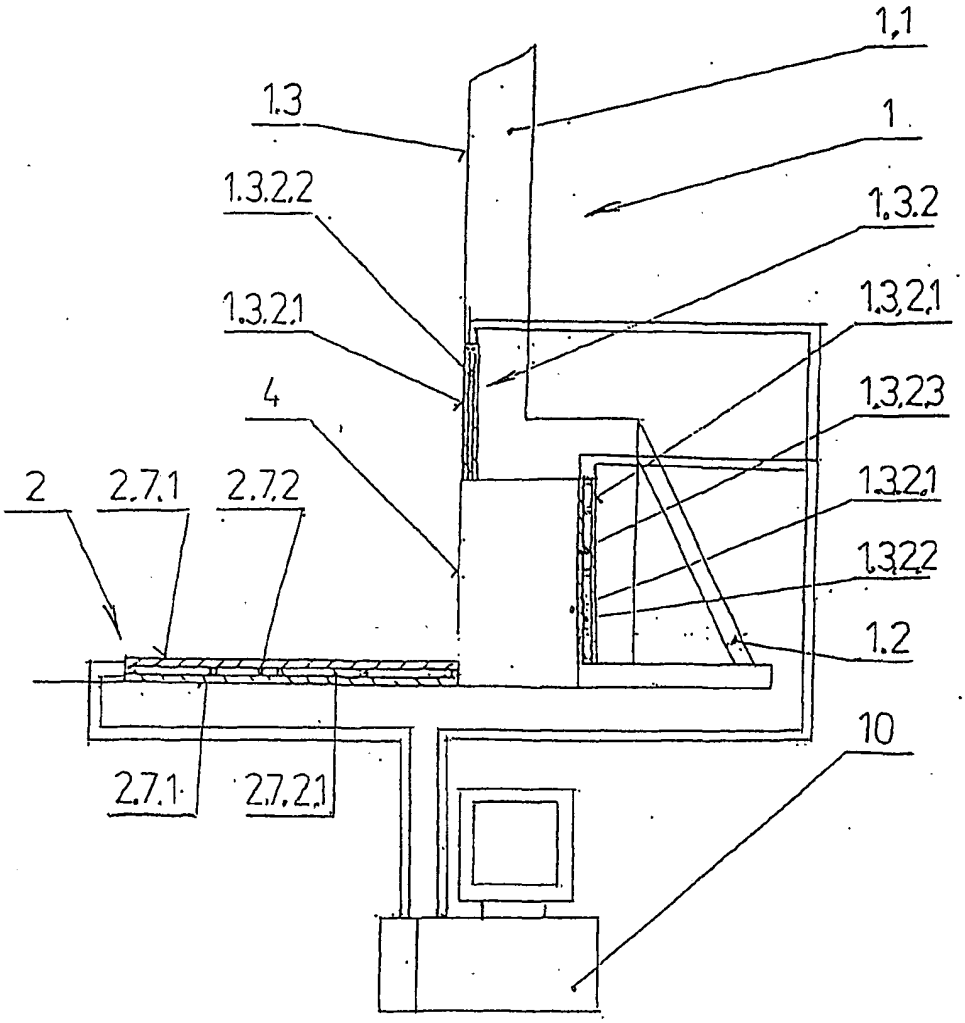
1.1
1.3
1
1.3.2.2
1.3.2
1.3.2.1
1.3.2.1
4
1.3.2.3
2
2.7.1
2.7.2
1.3.2.1
1.3.2.2
1.2
10
2.7.1
2.7.2.1

FIG. 6